Name:_____ Date:_____ Period:____

20

Special Lines Quiz

Fill in the blank for each sentence. (1 point each)
A vertical line has an undefined slope.
A horizontal line has a zero slope.
Parallel lines have the same slope.
The slope of two perpendicular lines is described as the negative reciprocal of each other.

Identify which lines are parallel. (1 point)
a. $y = \frac{5}{3}x$ (b) $y = 3x + 2$ c. $y = x + 4$ (d.) $y = 3x - 1$

Identify which lines are perpendicular. (1 point)
(a.) $y = 2x + 1$ b. $y = -2x$ c. $y = x - 2$ (d.) $y = -\frac{1}{2}x$

Use the given information to answer each question. (2 points each)	
Write the equation of the line that contains (2, 1) and is perpendicular to $y = -\frac{1}{2}x + 3$	Write the equation of the line that contains (6, 2) and is perpendicular to $y = -2x + 7$
$y = 2x + b$ $1 = 2(2) + b$ $1 = 4 + b$ $-4 \quad -4$ $-3 = b$ $y = 2x - 3$ $y = -\frac{1}{2}x + 2$	$y = \frac{1}{2}x + b$ $2 = \frac{1}{2}(6) + b$ $2 = 3 + b$ $-3 \quad -3$ $-1 = b$ $y = \frac{1}{2}x - 1$

$y = -\frac{1}{2}x + b$ $1 = -\frac{1}{2}(2) + b$
$1 = -1 + b$
$2 = b$

Determine if the two lines are parallel. (2 points each)

$3x - y = 9$ and $x + 3y = 36$

$-y = -3x + 9$

$y = 3x + 9$

$3y = x + 36$

$y = \frac{1}{3}x + 12$

perpendicular

$y = \frac{7}{2}x + 6$ and $-7x + 2y = 8$

$2y = 7x + 8$

$y = \frac{7}{2}x + 8$

parallel

Given the equation **y = 2x +3**. Answer the following questions. (2 points each)

Write an equation that is parallel to **y = 2x + 3.**

Write an equation that is perpendicular to **y = 2x + 3.**

Graph your two equations with **y = 2x +3.** Be sure to label each line!